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EXPRESSION OF MUSCARINIC RECEPTORS IN HUMAN CHRONIC ATRIAL FIBRILLATION

ACC Poster Contributions
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Background: Despite experimental evidences, the actual role of alterations in muscarinic receptors in human chronic atrial fibrillation (cAF) is not established yet.

Methods: To evaluate if their expression is altered in human cAF, we measured the positive areas at immunohistochemistry for muscarinic receptors 1 to 5 (M1-M5) in atrial sections of 13 necropsy cases of patients with cAF, comparing with 13 cases paired according to disease underlying cAF, but without this arrhythmia. Four anatomical sites were studied: the posterior wall of the right atrium and three areas of the left atrium, one including the median portion of vein of Marshall (AE1), other near the left inferior pulmonary vein (AE2), and the third concerning the myocardium subjacent the fat-pad of the superior ganglia plexus, between the superior pulmonary veins (FP1). We compared the results using t-Student test. Significance was established in $p \leq 0.05$.

Results: There was an increase in percentages of positive areas for M1 (AD1, AE1 and FP1), M2 (FP1), M3 (FP1) and M4 (AE1), which were in patients with and without cAF respectively: M1 - AD1 6.4 and 2.7 ($p<0.01$), AE1- 5.5 and 2.2 ($p=0.02$), FP1- 5.1 and 2.1 ($p=0.04$),; M2 - FP1- 5.6 and 3.6 ($p=0.03$), M3 - FP1- 30.9 and 20.1 ($p=0.02$); M4 - AE1- 9.9 and 4.4 ($p=0.02$). Muscarinic receptor 5 has no alterations in its expression.

Conclusions: We concluded that an increase in the expression of muscarinic receptors, except M5, may be involved in human chronic atrial fibrillation. The sites mostly affected were near the fat-pad (M1, M2, and M3), and the vein of Marshall (M1 and M4).